

211 **Abstract of Disclosure**

212 The object of this patent is to provide methods of propulsion for vertical and horizontal
213 aerospace flight. In vertical propulsion, the invention circulates matter, within the confine of a
214 machine, at speeds greater than the magnitude of velocity required for circular orbit of the the
215 planet, so as to develop radial acceleration relative to the planet center, creating a force,
216 associated with the mass of the particle stream times the radial acceleration, thereby generating
217 vertical thrust. This methodology shall be referred to as "Gyroscopic Lift". It is the further
218 object of this invention to provide additional method of horizontal propulsion. In horizontal
219 propulsion, the invention alternates acceleration and deceleration of matter, as it travels in a
220 circulatory system, so as to create changing centripetal acceleration, and a directional imbalance
221 of forces, thereby developing an outlet to be employed in horizontal thrust. This method of
222 alternating acceleration, and deceleration shall be referred to as "Impulse Propulsion".
223 Although the particular embodiment shown utilizes particles traveling perpendicular to gravity,
224 it should not be concluded that this is the only arrangement possible. Whenever a particle has a
225 component of velocity perpendicular to gravity in excess of circular orbit velocity, it is suitable
226 to provide some measure of vertical thrust. Thus many particle accelerator designs utilizing this
227 feature are feasible for the present invention. As an example, a particle accelerator whose axis
228 of rotation is not aligned with the z axis should provide vertical lift and possibly other
229 precession types of motion for a vehicle. As an alternative embodiment of this invention it
230 provides some measure of gyroscopic lift that may be harnessed. Another example; Particles in
231 solid form rotating on a gyroscopic ring, at a velocity greater than circular orbit, provides
232 gyroscopic lift, and is an alternative embodiment of this invention. Another example; If the
233 circulatory path of the doughnut is comprised of a shape other than a circle it may increase the

234 potential effect of impulse propulsion, but reduce gyroscopic lift efficiency. A shape comprised
235 of two half circle accelerators, linked into a circulatory pattern by two parallel linear
236 accelerators, would increase the potential thrust of impulse propulsion. Such is an alternative
237 embodiment of this invention. Thus the invention embraces all space engines which utilize the
238 principles of Gyroscopic Lift, and Impulse Propulsion.

239 Obviously, many modifications and variations of the present invention are possible in
240 the light of the above teachings. It is therefore to be understood that within the scope of the
241 appended claims, the invention may be practiced other than as specifically described.